CLAIMS

1. A nonrecursive digital filter which has an n-stage shift register
for sequentially shifting input data having a predetermined number n of
5   bits and in which the output of each output stage of the shift register
is multiplied by a filter coefficient and added, characterized in that
the n-stage shift register is divided into a plurality of shift
registers, and each divided shift register is time-divisionally driven
in synchronization with the input data.

10 2. A nonrecursive digital filter which has an n-stage shift register
for sequentially shifting input data having a predetermined number n of
bits and in which the output of each output stage of the shift register
is multiplied by a filter coefficient and added, characterized in that
the n-stage shift register is divided into first and second shift
15 registers each having n/2 stages, and one of the first and second shift
registers performs a shift operation at a rising edge of a shift clock
and the other performs a shift operation at a falling edge of the shift
clock.

3. A nonrecursive digital filter which has an n-stage shift register
20 for sequentially shifting input data having a predetermined number n of
bits and in which the output of each output stage of the shift register
is multiplied by a filter coefficient and added, characterized by
comprising: first and second shift registers to which a spreading-code
sequence is input and a shift clock is inputted, each having n/2 stages
25 obtained by dividing the n-stage shift register; a reference-code

register for storing n reference codes; first and second selection means

for selecting and outputting the odd-numbered stages and even-numbered

stages of the reference-code register according to the shift clock;

first multiplication means for multiplying the output of each stage of

5   the first shift register by the output of the first selection means;

second multiplication means for multiplying the output of each stage of

the second shift register by the output of the second selection means;

and correlation-strength calculation means for adding the multiplication

results of the first multiplication means and the second multiplication

10   means to output a correlation strength; and characterized in that the

first and second shift registers are configured such that either one of

them performs a shift operation at a rising edge of the shift clock and

the other performs a shift operation at a falling edge of the shift

clock; and the first and second selection means is configured such that,

15   when the shift clock is in an ON state, either one of them outputs the

even-numbered stages of the reference-code register to the first

multiplication means and the other outputs the odd-numbered stages to

the second multiplication means, and when the shift clock is in an OFF

state, the either one of them outputs the odd-numbered stages of the

20   reference-code register to the first multiplication means and the other

outputs the even-numbered stages to the second multiplication means

4.   A nonrecursive digital filter according to Claim 3, characterized in

that the first and second selection means is formed of multiplexers each

disposed for two stages of the reference-code register and selecting the

25   odd-numbered stages and even-numbered stages thereof; the first and

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second multiplication means is formed of exclusive-OR circuits; and the correlation-strength calculation means is formed of an adder.

5. A radio communication unit employing a CDMA method for performing operations, including path synchronization holding, when receiving a

5   spread-spectrum RF signal from a base station, characterized by comprising: an RF receiving section for converting a received RF signal into a base-band signal; a correlation section for holding an input digital signal, for holding a spreading code as a reference code, and for performing inverse spectrum conversion while calculating a

10 correlation therebetween, to output received data; and a base-band demodulation section for demodulating the received data; and characterized in that the input side of one of the correlation section and the base-band demodulation section is connected to the RF receiving section and the output side thereof is connected to the other; and the

15 correlation section includes a matched filter formed of a nonrecursive digital filter according to one of Claims 1 to 4.

6. A radio communication unit for transmitting information data in packets by a spread spectrum communication method, which directly performs spreading, in a radio local-area network formed with another

20 radio communication terminal, characterized by comprising: an RF receiving section for converting received information data into a base-band signal; a correlation section for holding an input digital signal, for holding a spreading code as a reference code, and for performing inverse spectrum conversion while calculating a correlation therebetween,

25 to output received data; a base-band demodulation section for

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demodulating the received data; and a packet processing section for

performing packet processing according to the received data; and

characterized in that the input side of one of the correlation section

and the base-band demodulation section is connected to the RF receiving

5   section and the output side thereof is connected to the other; the

output side thereof is connected to the packet processing section; and

the correlation section includes a matched filter formed of a

nonrecursive digital filter according to one of Claims 1 to 4.